

Application No.: 10/033,809
Amendment Dated: August 25, 2005
Reply to Office Action of: 7/30/04

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A computer-implemented method for bypassing I/O operations of a file system included in said computer, said computer having a computer program application that includes ordered computer code, said ordered code including I/O access commands, said file system that is optimized for queued said I/O access commands, the method comprising:

identifying said file system as ~~an OS/390 UNIX Hierarchical~~ a general purpose ~~[[I]]~~ file ~~[[S]]~~ system;

locating asynchronous direct said I/O access commands that are included in said application ordered computer code; and

bypassing said general-purpose file system by executing said asynchronous direct I/O access commands by use of a different file system.

- 1 2. (Original) The computer-implemented method of Claim 1, further comprising:
2 including an operating system in said computer; and
3 hypassing said queued I/O access commands when porting said application from said
4 operating system to a different said operating system.

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1 3. (Currently Amended) The computer-implemented method of Claim 1, further comprising
2 bypassing said general-purpose file system by use of an ~~OS/390-VSAM~~ a performance file that is
3 included in said different file system.

1 4. (Currently Amended) A computer-implemented method for aggregating asynchronous direct
2 I/O access commands, said computer having a computer program application that does
3 application I/O caching and includes ordered computer code, said each ordered computer code
4 having at least one said asynchronous direct I/O access command that operates with said
5 application I/O caching, said computer supporting I/O request chaining, said computer having a
6 file system that locates storage space for said computer code on said disk, said computer that
7 executes said computer program application, the method comprising:

8 locating said at least one asynchronous direct I/O access command;

9 associating said at least one asynchronous direct I/O access command with at least one

10 ~~OS/390-UNIX-HFS~~ general-purpose file;

11 associating said at least one ~~OS/390-UNIX-HFS~~ general-purpose file with at least one

12 ~~VSAM~~ performance file;

13 chaining said asynchronous direct I/O access command into at least one aggregated I/O

14 access command in said computer program application;

15 associating said at least one aggregated I/O access command with said at least one ~~VSAM~~

16 performance file;

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17 identifying a terminus point that is ordered in said ordered computer code;
18 issuing said at least one aggregated I/O command until said terminus point is reached;
19 and
20 when said terminus point is reached and if said at least one aggregated I/O command
21 remains, issuing a final said at least one aggregated I/O access command.

1 5. (Original) The computer-implemented method of Claim 4, further comprising:
2 including data in said at least one asynchronous direct I/O access command; and
3 including said data in said at least one aggregated I/O access command.

1 6. (Currently Amended) The computer-implemented method of Claim 4, further comprising
2 allocating said ~~VSAM~~ performance file in single extents.

1 7. (Currently Amended) The computer-implemented method of Claim 4, further comprising pre-
2 formatting said ~~VSAM~~ performance file.

1 8. (Currently Amended) The computer-implemented method of Claim 4, further comprising
2 allocating said ~~VSAM~~ performance file in a named ~~VSAM~~ performance file pool.

1 9. (Currently Amended) The computer-implemented method of Claim 8, further comprising

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2 marking said ~~VSAM~~ performance file in said named ~~VSAM~~ performance file pool as free.

1 10. (Currently Amended) The computer-implemented method of Claim 8, further comprising

2 marking said ~~VSAM~~ performance file in said named ~~VSAM~~ performance file pool as used.

1 11. (Currently Amended) The computer-implemented method of Claim 4, further comprising

2 allocating said ~~VSAM~~ performance file in a default ~~VSAM~~ performance file pool.

1 12. (Currently Amended) The computer-implemented method of Claim 11, further comprising

2 marking said ~~VSAM~~ performance file in said default ~~VSAM~~ performance file pool as free.

1 13. (Currently Amended) The computer-implemented method of Claim 11, further comprising

2 marking said ~~VSAM~~ performance file in said default ~~VSAM~~ performance file pool as used.

1 14. (Currently Amended) The computer-implemented method of Claim 4, further comprising

2 manipulating said ~~VSAM~~ performance file by a file pool utility.

1 15. (Original) The computer-implemented method of Claim 4, further comprising recovering

2 from errors occurring while executing said at least one aggregated I/O access command.

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1 16.(Original) The computer-implemented method of Claim 4, further comprising locating said at
2 least one asynchronous direct I/O access command in a loop in said ordered computer code.

1 17. (Currently Amended) A computer system for bypassing I/O operations of a file system
2 included in said computer system, said computer system having a computer program application
3 that includes ordered computer code, said ordered code including I/O access commands, said file
4 system that is optimized for queued said I/O access commands, comprising:

5 said file system as an ~~OS/390 UNIX Hierarchical~~ general-purpose [[F]]file [[S]]system;

6 asynchronous direct said I/O access commands that are included in said application ordered
7 computer code; and

8 said general purpose file system that is bypassed by executing said asynchronous direct I/O
9 access commands by use of a different file system.

1 18. (Original) The computer system of Claim 17, further comprising:

2 an operating system in said computer; and

3 said queued I/O access commands that are bypassed when porting said application from said
4 operating system to a different said operating system.

1 19. (Currently Amended) The computer system of Claim 17, further comprising said general
2 purpose file system that is bypassed by use of an ~~VSAM~~ a performance file that is included in

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3 said different file system.

1 20. (Currently Amended) A computer system for aggregating asynchronous direct I/O access
2 commands, said computer having a computer program application that does application I/O
3 caching and includes ordered computer code, said each ordered computer code having at least
4 one said asynchronous direct I/O access command that operates with said application I/O
5 caching, said computer supporting I/O request chaining, said computer having a file system that
6 locates storage space for said computer code on said disk, said computer that executes said
7 computer program application, comprising:
8 said at least one asynchronous direct I/O access command;
9 said at least one asynchronous direct I/O access command that is associated with at least one
10 ~~OS/390 UNIX HFS~~ general purpose file;
11 said at least one ~~OS/390 UNIX HFS~~ general purpose file that is associated with at least one
12 ~~VSAM~~ performance file;
13 said asynchronous direct I/O access command that is chained into at least one aggregated I/O
14 access command in said computer program application;
15 said at least one aggregated I/O access command that is associated with said at least one
16 ~~VSAM~~ performance file;
17 a terminus point that is ordered in said ordered computer code;
18 said at least one aggregated I/O command that is issued until said terminus point is reached;

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19 and
20 when said terminus point is reached and if said at least one aggregated I/O command remains,
21 a final said at least one aggregated I/O access command that is issued.

1 21. (Original) The computer system of Claim 20, further comprising:
2 data that is included in said at least one asynchronous direct I/O access command; and
3 said data that is included in said at least one aggregated I/O access command.

1 22. (Currently Amended) The computer system of Claim 20, further comprising said ~~VSAM~~
2 performance file that is allocated in single extents.

1 23. (Currently Amended) The computer system of Claim 20, further comprising said ~~VSAM~~
2 performance file that is a pre-formatted file.

1 24. (Currently Amended) The computer system of Claim 20, further comprising said ~~VSAM~~
2 performance file that is allocated in a named ~~VSAM~~ performance file pool.

1 25. (Currently Amended) The computer system of Claim 24, further comprising said ~~VSAM~~
2 performance file that is marked in said named ~~VSAM~~ performance file pool as free.

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1 26. (Currently Amended) The computer system of Claim 24, further comprising said ~~VSAM~~
2 performance file that is marked in said named ~~VSAM~~ performance file pool as used.

1 27. (Currently Amended)) The computer system of Claim 20, further comprising said ~~VSAM~~
2 performance file that is allocated in a default ~~VSAM~~ performance file pool.

1 28. (Currently Amended) The computer system of Claim 27, further comprising said ~~VSAM~~
2 performance file that is marked in said default ~~VSAM~~ performance file pool as free.

1 29. (Currently Amended) The computer system of Claim 27, further comprising said ~~VSAM~~
2 performance file that is marked in said default ~~VSAM~~ performance file pool as used.

1 30.(Currently Amended) The computer system of Claim 20, further comprising said ~~VSAM~~
2 performance file that is manipulated by a file pool utility.

1 31. (Original) The computer system of Claim 20, further comprising said executing at least one
2 aggregated I/O access command that recovers from errors.

1 32.(Original) The computer system of Claim 20, further comprising said at least one
2 asynchronous direct I/O access command that is located in a loop in said ordered computer code.

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1 33. (Currently Amended) An article of manufacture comprising a program storage medium readable
2 by a computer and embodying one or more instructions executable by said computer for bypassing
3 I/O operations of a file system included in said computer, said computer having a computer program
4 application that includes ordered computer code, said ordered code including I/O access commands,
5 said file system that is optimized for queued said I/O access commands, wherein:

6 computer-readable program code identifies said file system as ~~an OS/390 UNIX Hierarchical~~
7 a general-purpose [[F]]file [[S]]system;

8 computer-readable program code locates asynchronous direct said I/O access commands that
9 are included in said application ordered computer code; and

10 computer-readable program code bypasses said general purpose file system by executing
11 said asynchronous direct I/O access commands by use of a different file system.

1 34.(Original) The article of manufacture of Claim 33, wherein:

2 computer-readable program code includes an operating system in said computer; and

3 computer-readable program code bypasses said queued I/O access commands when porting
4 said application to a different said operating system.

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1 35.(Currently Amended) The article of manufacture of Claim 34, wherein computer-readable
2 program code bypasses said general purpose file system by use of an ~~OS/390 VSAM~~ a performance
3 file that is included in said different file system.

1 36. (Currently Amended) An article of manufacture comprising a program storage medium readable
2 by a computer and embodying one or more instructions executable by said computer for aggregating
3 asynchronous direct I/O access commands, said computer having a computer program application
4 that does application I/O caching and includes ordered computer code, said each ordered computer
5 code having at least one said asynchronous direct I/O access command that operates with said
6 application I/O caching, said computer supporting I/O request chaining, said computer having a file
7 system that locates storage space for said computer code on said disk, said computer that executes
8 said computer program application, wherein:

9 computer-readable program code locates said at least one asynchronous direct I/O access
10 command;

11 computer-readable program code associates said at least one asynchronous direct I/O access
12 command with at least one ~~OS/390 UNIX HFS~~ general-purpose file;

13 computer-readable program code associates said at least one ~~OS/390 UNIX HFS~~ general-
14 purpose file with at least one ~~VSAM~~ performance file;

15 computer-readable program code chains said asynchronous direct I/O access command into
16 at least one aggregated I/O access command in said computer program application;

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1 computer-readable program code associates said at least one aggregated I/O access command
2 with said at least one ~~VSAM~~ performance file;
3 computer-readable program code identifies a terminus point that is ordered in said ordered
4 computer code;
5 computer-readable program code issues said at least one aggregated I/O command until said
6 terminus point is reached; and
7 when said terminus point is reached and if said at least one aggregated I/O command
8 remains, computer-readable program code issues a final said at least one aggregated
9 I/O access command.

10 37.(Original) The article of manufacture of Claim 36, wherein computer-readable program code
11 locates said at least one asynchronous direct I/O access command in a loop in said ordered computer
12 code.